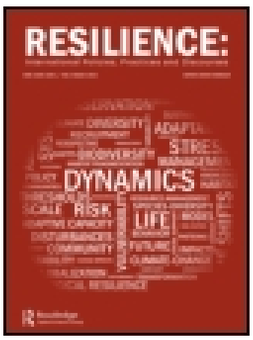

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Does diversification enhance community resilience? A critical perspective

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ABSTRACT

Resilience has become a key component of how practitioners and scholars conceptualize sustainable communities. Given sustainability's focal role in shaping international development funding, policies and programming it is imperative that we critically engage with the concepts embedded within the resilience discourse – including prescriptions for increased diversity. This article contributes to a discourse that questions this common recommendation for diversification, particularly as it relates to agricultural livelihoods and smallholder production. We provide examples from Ethiopia that demonstrate the two limitations of diversification. The first, that some forms of diversification are, in fact, maladaptive and reduce resilience. The second, that diversification is not always equal – some forms of diversification are only accessible to the most vulnerable. As the 2030 Agenda moves ahead in shaping what is considered important, and therefore funded and measured, we argue that much more context-specific nuance is required within the resilience discourse.

KEYWORDS

Ethiopia; resilience; diversification; finance; livelihood; agriculture

Introduction

Resilience has become a cornerstone in sustainability thought and how practitioners and scholars conceptualize sustainable communities (Milman & Short, 2008). The omnipresence of sustainability within the development arena has facilitated the emergence of a range of foundational concepts, such as adaptive capacity and resilience, each of which have unique measures and metrics for their associated assessment and evaluation (Milman & Short, 2008). We expect that alongside attention to individual and institutional capacity, resilience will increase in importance as it has been integrated within the 2030 Agenda for Sustainable Development – specifically within the Sustainable Development Goals where two goals (9 and 11) and seven targets (1.5, 2.4, 9.1, 11b, 11c, 13.1, 14.2) outline resilience as the objective sought after (UN, 2016). Yet, within the targets, resilience is undefined and its metrics are yet to be determined. It is, therefore, imperative that the core concepts that define our understanding of resilience be critically analyzed. The definitions, and their respective

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metrics, are important because they will influence funding, programming, policy and measurement, and importantly will also influence what is excluded from those things.

In this paper, we assess one of the common recommendations within the resilience literature, diversification, which has become an important goal of development policy (Berbes-Blazquez, Mitchel, Burch, & Wandel, 2017; Ellis, 1998). This contribution builds upon critical studies of diversification (e.g. Dimova & Sen, 2010; Ellis, 1998; Reardon, 1997; Reardon, Delgado, & Matlon, 1992), adding new evidence to the critical discourse. While not a blanket recommendation, it's omnipresence in resilience and development rhetoric should be accompanied by a more nuanced discussion of the circumstances under which diversification should be pursued (Dimova & Sen, 2010; Reardon, 1997; Reardon et al., 1992). Research of this nature, we argue, continues to be important as the critical research has not yet translated into shifts in policy and practice, where diversification continues to be a key recommendation and goal (e.g. African Development Bank, 2015; NEPAD, 2016; Shiferaw et al., 2014).

This paper will argue that while diversification has the potential to enhance resilience, it is not necessarily the case. The first section of this paper explores the resilience literature, with specific attention paid to the role that diversification plays within it. We then turn to the experience of smallholder farmers in Ethiopia, and use those experiences to show that not all diversification is positive; in fact it can be maladaptive. In some circumstances diversification can be a sign of vulnerability and duress, not strength and opportunity. This emphasizes the importance of better understanding the metrics, lest we incorrectly interpret findings or promote inappropriate responses to change. In challenging the dominant mantra of diversification we are not opposing it; rather, we seek to support the emergence of a more nuanced approach to the study and promotion of diversification. We conclude this paper with a discussion on our reflections about the way forward, and the potential means through which metrics, measurements and goals that assess and evaluate diversification can take into account the multiple and diverse impacts it can have.

Diversification in the literature

Resilience within the development discourse has been a way of conceptualizing the robustness needed in communities to mitigate shocks and as a method of promoting solutions to complex, context specific problems. Yet, resilience itself has adapted as a concept – transitioning from a focus on efficiency of recovery post-shock, to an ability to withstand or absorb shock (absorptive capacity) to, finally, a focus on adapting once shock hits (Folke, 2006; Holling, 1973, 1996, 2001). The most recent iteration, social ecological resilience, emphasizes the interplay between social and ecological systems (Folke, 2006). The socio-ecological model is useful in its ability to theoretically ground social and environmental elements of resilience in a larger discourse of political and climactic uncertainty (Berbes-Blazquez et al., 2017). Social ecological resilience also introduces the concept of adaptive capacity, a departure from dominant resilience models, which emphasized absorptive capacity. Adaptive capacity is a way of conceptualizing the ability of a particular place to adapt and adjust to shock – not simply recover. Adaptive capacity paved the way for the sustainability dialog to include discussions of systems innovations, which include both social and ecological systems (Walker, Holling, Carpenter, & Kinzig, 2004). As a result, the discourse has moved beyond individual or household level adaptation to encompass community level transitions, from one state to another, in the face of shocks and outside pressures (Berbes-Blazquez et al., 2017; Folke et al., 2010).

Promoting adaptive capacity in communities relies on engaging in economic development and bolstering social capital, information and communication capabilities, or community competencies; hallmarks of community development practice (Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008; Paton & Johnston, 2001). This act of cultivating resilience, rather than documenting it as well as discussing the transformative capacities of communities, are departures from the socio-ecological model (Adger, 2000; Bishop, Paton, Syme, & Nancarrow, 2000; Breton, 2001; Clauss-Ehlers & Lopez-Levi, 2002; Miller, Paton, & Johnston, 1999; Norris et al., 2008). Transformative capacity is particularly important for discussing how communities build their ability to transform the type of shock they experience and actively engage in making system changes to prepare for shocks (Smith & Frankenberger, 2017; Wilson, Pearson, Kashima, Lusher, & Pearson, 2013). This emphasis on transformative capacity building and community level systems change was captured in new models of resilience – community resilience (Frankenberger, Mueller, Spangler, & Alexander, 2013).

Increasingly, community resilience has been tied to a larger goal of improving quality of life and mediating factors which induce stress (Kimhi & Shamai, 2004; Paton & Johnston, 2001; Tompkins & Adger, 2004). The benefits of improving community efficacy and empowerment through community development and participatory decision-making are seen in an increased ability of communities to cope with outside sources of stress and shock (Bishop et al., 2000; Kieffer, 1984; Miller et al., 1999; Norris et al., 2008).

However, regardless of how resilience has been defined or conceptualized, diversification has consistently been one of the prescriptions for non-resilient systems or households; and, as with resilience, the definition of diversification has changed over time. Initially, diversification was described solely within the confines of biodiversity and bolstering ecological systems by increasing the variety of living organisms within the system (Elmqvist et al., 2003; Lin, 2011; Vandermeer, van Noordwijk, Anderson, Ong, & Perfecto, 1998; Walker, 1995). Biodiversity still remains an important component of resilience, but has grown to encompass other concepts. This includes agricultural diversity and crop diversity as a result of a growing emphasis on the role of agriculture in shaping ecological systems (Altieri, 1999; Folke, 2006; Gurr, Wratten, & Luna, 2003; Lin, 2011). Agriculture also paved the way for the inclusion of non-ecological conceptualizations of diversification, and ultimately the development of the social-ecological resilience model. The importance of agriculture as a livelihood strategy among economically vulnerable populations, led to the addition of livelihood, social environment, and financial diversification to the social-ecological resilience model (Altieri, 1999; Block & Webb, 2001; Eriksen, Brown, & Kelly, 2005; Goulden, Adger, Edward, & Conway, 2013; McIntosh, 2000; Olick & Robbins, 1998; Osbahr, Twyman, Adger, & Thomas, 2008; Ostrom, 2005; Verchot et al., 2007).

The omnipresence of diversification in the resilience literature and development discourse has made it one of the core strategies in resilience building activities internationally (Berbes-Blazquez et al., 2017). This is particularly true for agricultural communities in low-income countries, where crop and livestock diversification, spatial diversification of farms, and diversification of livelihood strategies, including the incorporation of off-farm income are dominant resilience building strategies (Ellis, 1998; Reardon, 1997; Reardon et al., 1992; Shiferaw et al., 2014). In this context, diversification is an ex ante strategy for mitigating shocks and is used to reduce income shortfalls, by increasing the likelihood that farmers will be able to

produce enough to cover expenses (Shiferaw et al., 2014). Yet, other households use this diversification strategy as a means of accumulating wealth (Dimova & Sen, 2010).

Within a community development context, scholars and practitioners have also stressed the importance of diversifying community assets and competencies – including, social supports, organizational capabilities, skills, knowledge, and even cultural diversity (Turner et al., 2003; Norris et al., 2008; Smith & Frankenberger, 2017). Generally, the accepted logic is by increasing the number of resources or strategies employed to improve the community and mitigate risk, the more likely communities are able to overcome a variety of shocks (Block & Webb, 2001; Norris et al., 2008). The push for diversification also stems from the benefits that a sense of preparedness can have on community well-being. By increasing the avenues for mediating risk and subsequently improving the community's capabilities of responding to shock, either through mitigation or adaptation, a community can bolster psychological resilience and improve community members' sense of well-being (Berbes-Blazquez et al., 2017; Kimhi & Shamai, 2004; Paton & Johnston, 2001).

Within a Sub-Saharan African and smallholder context, diversification has become particularly important (African Development Bank 2015; NEPAD, 2016; Shiferaw et al., 2014). Generally, this diversification, is tied to a need to diversify the income and asset portfolio to minimize risk, and is promoted and positively associated with economic and household well-being (Barrett, Reardon, & Webb, 2001; Ellis, 1998; Reardon, 1997; Reardon et al., 1992). The dominant narrative that diversification is a necessary prerequisite to a resilient system or resilient household, means there are few cases that discuss the potential limitations or negative impacts of diversification within specific agroecological and social contexts (Haggblade, Hazell & Brown, 1989; Hazell & Haggblade, 1993). However, more recent work has shown that the benefits of diversification are mostly reaped by wealthy smallholders as a means of accumulating wealth, and are not equally accessible or beneficially to all community members (Dimova & Sen, 2010). This recent work outlines a need for more context-specific recommendations for diversification. Additionally, Altieri (1999) acknowledged the need for context and called for a balance of the right kinds of diversification. Building upon these works, we argue that the resilience literature has insufficiently taken into account how we can understand what the 'right' and 'wrong' kinds of diversification are, and what other factors influence the occurrence and impact of them. The following section examines some of the nuance of that balance, and goes further to suggest that diversification, in some contexts, can be detrimental to outcomes critical to socio-ecological resilience.

Diversification in practice

Evidence for this critique of diversification as a commonly utilized strategy within resilience building initiatives comes from two separate studies in Ethiopia. The first is a co-production approach between community members and a researcher undertaken in southern Ethiopia during 2015, focusing upon food security (see: Cochrane, 2017). The methodology of that research compared three communities in Wolaita Zone of the Southern Nations, Nationalities and Peoples' Region (SNNP). The three rural communities were purposefully selected based on their common agroecology and sociocultural setting but different geospatial differences: one relatively remote, one near to a town and one with irrigation infrastructure. Community members co-created data collection tools and co-analyzed the results, enabling new perspectives to enter into the research process and findings. The second study was conducted

in the Amhara Region among peri-urban communities selected for their different agro-ecological zones (highland vs. midland) and agricultural systems: one where the emphasis is on food crops, a second wherein cash crops were exclusively relied upon, and a third with a mixture of food crop and cash crop production. Data were collected from the Amhara Region farmers from December 2014 through March 2015. There were approximately 115 farmers in the sample and both qualitative and quantitative data were collected. A mixture of information on crops, livelihood, food security strategy, and engagement with local institutions, including extension (the application of scientific knowledge and research to agricultural practices through the provision of information to farmers), was collected. These farmers were chosen because of their location near extension officials, proximity to market, and dominant crop type – tef, sorghum, maize, and khat.

As outlined above, there is a tendency among some scholars, practitioners and policy makers to equate diversification with positive outcomes. Farmers in these communities, however, suggested that much more nuance is required in order to appropriately understand the implications and impacts of diversification. While some forms of diversification were indicative of opportunity and resulted in positive changes for individuals and households, not all were. Rather, diversification can also be an expression of difficulty or result from vulnerability, and the changes may negatively impact individuals and households in the short or long term. During the creation of data collection tools, community members engaged in the process to ensure that the questions and metrics that were used sufficiently captured the diverse impacts that diversification can have – of particular interest for the purposes of this article are those that are not necessarily good, nor a sign of improvement, risk mitigation or broadening of opportunity. In highlighting this aspect of the research, we aim to contribute a critical perspective to a discourse that is often driven by value-based positions on what agriculture and agricultural livelihoods ought to be. Positive impacts of diversification are mentioned, but are not emphasized; in doing so, we are not arguing that diversification ought to be avoided or is harmful, there is ample evidence in the literature – and from these case studies – that some forms of diversification result in significant positive change.

Within the communities of the research areas, diversification took many forms. In this article, we focus upon three areas: crops and livestock, livelihoods, and finance. As with much of the resilience literature globally, research, policies, and programs in Ethiopia tend to view diversification as positive and promote it as an important component of sustainable rural livelihoods (e.g. Block & Webb, 2001; Gecho, Ayele, Lemma, & Alemu, 2014; Headey, Taffesse, & You, 2014; Megersa et al., 2014; Shiferaw et al., 2014; Tsegaye, Vedeld, & Moe, 2013; Woldenhanna & Oskam, 2001; Yosef, Mengistu, Mohammed, & Kefelegn, 2013). There is some evidence that, in certain contexts, diversity is not the optimal choice in poverty reduction strategies, particularly in light of some increased productivity of certain cash crops with rising global temperatures, and the market failures of government-led diversification schemes (Agrawala et al., 2003; Hausermann & Eakin, 2008). In contrast to the diversification recommendation, there are also advocates who suggest reducing diversity as a means as poverty reduction, such as by utilizing the competitive advantage of growing higher value crops and moving toward monoculture production (Tefera, 2009). In this article, we do not engage with the theoretical possibilities of what monoculture offers in contrast to a diversity of crops, rather we base our analysis on what farmers are practicing; the choices that they are actually making. Within the studied communities, diversifications are occurring, and what we put forward is an assessment of those diversifications in light of their impact on resilience.

Crop and livestock diversity

A reading of the resilience literature would lead one to assume that crop diversity, specifically the number of crops utilized in the production system, particularly in rain-fed agricultural areas with variable rainfall, would strengthen food security. The logic supporting this conclusion is that having multiple options reduces risk because if one crop fails or has a less than ideal yield, the other crops may produce as expected and thus mitigate the risks. However, household surveys from both the Amhara and SNNP regions found the opposite: in the south the community with the strongest average household food security, the one with irrigation infrastructure, planted a lower average number of crops (5.8 crops per household) than the other two communities (6.7 crops per household) (Cochrane & Gecho, 2016). In the north, similar patterns were found, the community with the highest percentage of food secure households planted fewer crops, especially fewer food crops. The community in Amhara with the strongest average food security also had access to irrigation infrastructure, which was utilized by most households. Focus group discussions within communities explained that what was more important than the number of crops was the type of crops. Households experiencing greater vulnerability were diversifying their planting repertoire – transitioning from long-cycle crops that require a sufficient amount of rainfall for the course of the growing season to either, short-term crops that could yield harvests within shorter seasons or to cash crops (e.g. fruit trees, vegetables for market) well suited to variable rainfall or that make use of the available irrigation systems.

This shift to short-term crops appears to align with perspectives presented in the resilience literature, yet we argue this is in fact maladaptive, and reduces resiliency by shifting risk from the short term to the annual and long term. Shifting from higher yielding longer term crops, such as cereals, to shorter-term crops, such as pulses, increases the 'hunger season' wherein harvests run short, often resulting in distress migration (Cochrane & Vercillo, in press) or borrowing (Cochrane & Thornton, 2017). Rather than as an expression of strength and opportunity, therefore, these forms of diversification are due to vulnerabilities: variable rainfall, insufficient land size and land fragmentation, inconsistent access to agricultural inputs, a lack of irrigation and population growth (Cafer, Willis, Beyene, & Mamo, 2015; Cochrane & Gecho, 2016). These stressors are not new, and neither are the responses from smallholder farmers in their diversification choices. Tsegaye and Struik (2002), also in southern Ethiopia, found that households with relatively fewer resources grew fewer perennial crops and focused upon shorter term crops. On the other hand, it was reduced risk, through irrigation infrastructure, that allowed farmers to focus their efforts on fewer crops, and specifically those with higher market value.

Diversification is not necessarily positive or negative. In addition to the maladaptive diversifications, farmers in smallholder communities are diversifying in ways that also enhance resilience, such as including new crops due to consistent and sufficient water access, as well as producing multiple crops per year, as opposed to the seasonally determined ones. This has resulted in significant income increases as well as new means of obtaining income from agriculture. For example, almost every household in the southern community with irrigation infrastructure (91%) sold produce on the market, whereas in the other two communities, even the one nearest to a town, had much lower community averages of doing so (55% for the remote community, 58% for the community near the town). Likewise, nearly all farmers (96%) in the northern community with irrigation infrastructure had converted a significant

portion of their production to *Catha edulis* (khat), a cash crop, with fewer food crops compared to the other two communities (0% of farmers and 63% of farmers converted to khat). Recall, however, that based on crops grown per household, these are the same communities that had the lowest levels of overall crop diversification.

Farmers recognize which forms of diversification are positive, but not all have the ability or opportunity to utilize them. Farmers with relatively more assets and access, are willing to absorb initially higher costs of investment, both direct and indirect, as a means to strengthen their resilience. An example of this includes the direct cost of obtaining fruit tree saplings and the multi-year delays of yields while trees mature. In the community with irrigation in the study within SNNP, households planted, on average, significantly more avocado trees, than the other communities without irrigation (2.3 trees vs. 1.5 trees). A similar trend existed for livestock diversification: egg-producing chicken breeds must be purchased and vaccinations are important for maintaining their health – an expression of strength and opportunity. While generally uncommon, households in the community with irrigation had, on average, more of this breed of poultry than the other communities (0.5 chickens vs. 0.1 chickens). It is important to reiterate that community members within the other communities knew of avocado trees and new poultry breeds, but were unable to obtain them due to insufficient resources to cover the direct and indirect costs, or due a lack of access (of the commodity itself, or what was required to maintain it, such as vaccinations). The important question, therefore, is what forms of diversification enhance resilience, and which are maladaptive? And further, who is making the respective choices and why? Asking these questions allows for an improved understanding of diversification: not all diversification is equal, not all people have equal opportunities to different forms of diversification, nor do all diversifications necessarily enhance adaptive capacity. The choices made out of vulnerability that are maladaptive are demonstrative of how the approach to resilience must become more nuanced in how it engages with diversification.

Livelihoods

While crop choices are diversifying, so too are off-farm and non-farm livelihood choices. As with crop choices, however, livelihood diversifications are not necessarily positive changes. In the study areas of both Amhara and SNNP, typical off-farm activities that are undertaken include bringing items from rural areas to urban ones for sale, such as firewood or butter, or bringing items from the urban area to the rural area for sale, such as processed foods, tools and utensils. Not all activities are equally as profitable, and not all are equally available (due to capital requirements) as options for everyone. However, analyses of livelihood diversification within households that do not analyze the type of diversification, and meaning of them, may fail to account for what the impacts of diversification have on resilience. For example, firewood is obtained by cutting down trees, which is carried to the town for sale, a labor-intensive task for very little remuneration (one or two full days of work may result in 10–15 ETB, or ~US$ 0.50). This task is almost always undertaken as a last resort option, a means to obtain a meal or two for the household during a time period of food shortage. While the short-term needs may be met (albeit insufficiently), the long-term viability of this income generating avenue is negatively impacted by unsustainable and unplanned deforestation, as well as the cause of conflict over resource use. As with crop diversification, some livelihood diversifications can be maladaptive and weaken resiliency. Selling butter or milk,

while similarly products that move from the rural to the urban, can reinforce existing strengths, inequalities (being able to own or co-own dairy cattle), and opportunities (being near to areas of demand, or having transportation), thereby providing highly differential returns for equal amounts of time and labor. As a value-added product, butter draws upon the resources of rural areas (land, livestock and labor) to generate additional revenue that can be sustained, and potentially expanded.

New non-farm livelihood options are best typified by migration patterns. Community members throughout the study area in SNNP were greatly concerned about high levels of youth migration, and emphasized the importance of classifying types of migration: some as expressions of strength and others of vulnerability or duress. Youth living in households where food shortages were severe would migrate in response to extreme difficulty within the household, often seeking uncertain, temporary low-paid, unskilled and precarious labor work. Youth migrants seeking unskilled work often relocate to nearby towns and cities, with young men hoping to work on construction sites and young women in the service sector (Cochrane & Vercillo, in press). Migration of this form is a compounding of vulnerabilities: whether an immediate food shortage in the household or the long-term inability to support children to complete their education, and therefore obtain better employment opportunities. In the community with irrigation in SNNP, nearly half of the youth migrants left for skilled labor work (43%), whereas this was significantly lower in the other two communities (16 and 21%). Yet, overall migration was highest from the remote community. As it relates to the discussion on diversification, this is key: if 'migration' is aggregated, then it appears that the remote community is diversifying household livelihood choices to mitigate risk, but the type of migration can be an expression of vulnerability and duress. In the remote community, more youth were migrating, and the majority of migrants left for unskilled labor work (79%). As community members emphasized, simplifications and generalizations about livelihood choices neglect the complexity of lived reality – not all livelihood diversifications are equal or positive. While some livelihood diversification are proactive choices based on long-term planning and investment for permanent and relatively well paid work, others are indicative of serious challenges being encountered, with choices being made to address immediate needs, often with long-term negative consequences.

In addition to geospatial location, inequality within and between communities is an important barrier to or enabler of diversification. The cost of owning or renting oxen for plowing (as opposed to plowing by hand) or the costs of new crop seed and other inputs, all create a form of 'poverty penalty' (Mendoza, 2008) whereby the poor are less able to obtain benefits of services being provided or to implement training, such as planting methodologies taught by agricultural extension workers or income diversification strategies (bee-keeping, vegetable production, etc.) (Cafer, 2016). In the Amhara communities, average input costs varied greatly ($164–$236) by village and between households within villages. Costs were highest in villages where there was far less diversification. There are two explanations for this – the first is that farmers in villages with the most amount of diversification are also the poorest. They tend to diversify their crops because they cannot afford improved seeds or fertilizer for more mainstream grains and varieties and instead rely on a combination of pulses, grains, and vegetables for which seeds are readily exchanged in informal systems (i.e. not purchased from agricultural retailers or extension agents) and that can maintain soil fertility through rotation.

The second explanation is that farmers, who have access to irrigation in this region, tend to shift their crop choice toward khat production, a cash crop, to pay for costly household expenses, including input costs for improved varieties. After initial experimentation with growing khat, most farmers decide to make a complete transition, and grow only a few other crops, namely wheat and maize. Farmers who have access to irrigation have ceased to produce most other crops, while those producing rain-fed khat are still likely to grow a number of other grain crops. As noted above, this is reflective of vulnerabilities and risks encountered. The ability of relatively resource flush farmers to purchase their inputs and improved varieties from extension, bolsters the relationship between these communities and households and that particular institution. In this context, extension is responsible for not only disseminating agricultural knowledge but for providing access to inputs. This role leads them to focus on resource wealthy farmers to meet mandated quotas for farmer contact or production area cultivated using new technologies or techniques. This translates into improved services from governmental agricultural extension services in these areas. In a study on farmers' knowledge of a new planting system for teff, farmers in the communities with these stronger relationships were more likely to have heard about and actually seen a demonstration (Cafer, 2016; Cafer & Rikoon, 2017).

Finance

The diversification of financial options is less often a consideration in the rural resilience literature than it is in the rural development and economic ones. In these fields, it is widely held that more options for financial services increases the competitiveness of the financial marketplace, which in turn benefits users of it (Mahieux, Zafar, & Kherallah, 2011; Salami, Kamara, & Brixiova, 2010). In an environment where there is only one source of credit, for example, high rates of interest and inflexible repayment terms may be maintained because there are no competing options that would facilitate change. In rural Ethiopia, the formal options for financial services, and specifically access to credit, are limited. The financial marketplace is heavily regulated, and current regulations even bar non-governmental organizations from offering credit as one of their services (Brislin & Dlamini, 2006).

Despite the limited number of formal providers of credit in rural settings, there are a diversity of other options. The marketplace is not dominated by a single formal entity, (government); in fact, other than credit provided via the government for agricultural inputs, accessing credit via the governmental microfinance institutions are quite low (approximately 5% of households; see discussion in Cochrane and Thornton (2017) for additional detail). Alternative, largely informal, options include: cooperatives, local lenders, traders and loans via existing social networks. Despite the potential positive impacts the diversity of options may imply for accessing credit, interest rates remain high, repayment terms inflexible and penalties, for not meeting deadlines, large.

Community members from each of the study areas rely heavily upon credit for their agricultural livelihoods and to ensure their basic needs are met. While some localized trends exist regarding the level of importance each lender has, the diversity of potential providers has not improved the terms of the available options. The reasons for the lack of improvement are multiple. One reason is the formal restriction of credit provision, preventing alternatives, such as non-governmental organizations, from offering credit with more favorable terms.

This regulation has also increased the risk for lenders in the informal marketplace, as they have no legal means of ensuring debts are repaid, and thus interest rates can be as high as 50% (Cochrane & Thornton, 2017). The less than ideal terms for credit is also a product of the ways in which informal credit is acquired: cooperatives, local lenders, traders, and social networks are reflections of sociocultural, political and class divisions within society, and thus favorable terms only exist for particular people with certain relationships or power (as identified in other settings by Gray & Dowd-Uribe, 2013; Guérin, D'Espallier, & Venkatasubramanian, 2013). The poor, marginalized, ethnic minorities, and supporters of opposition political parties experience multiple layers of exclusion; with accessing credit in the informal sector being only one of the areas of their lives wherein discrimination exists (Berhanu & Poulton, 2014; Cochrane & Tamiru, 2016). Even in the formal lending environment, a penalty exists for being poor: due to governmental objectives, farmers are strongly encouraged (e.g. forced) to purchase government-provided agricultural inputs, specifically fertilizer, many are unable to afford them or unable to repay the cost of their use (Handino, 2014). In-depth interviews and focus groups in northern Ethiopia revealed that this compulsory purchase stifled their desire to engage in improved agricultural practices, counteracting other efforts (beyond diversification) to build resilient systems.

The point of introducing financial diversification into this conversation is to highlight the fact that without the right environment – be that equal access to irrigation, the availability of improved seed or existence of financial markets – the impact of diversification ought not to be assumed as positive. Rather, as the exploration of crops and livestock, livelihoods and finance has shown, diversification can be maladaptive, can increase vulnerabilities and can entrench marginalization. The financial aspect of smallholder farmer lives that was focused upon in this section was access to credit, but there are similar impacts in other financial arenas where enabling environments pose barriers that people are unequally able to overcome. For example, remittance, both domestic and international, is another example of this. In order to obtain remittance one must have access to a bank, have identification, and have a means to communicate (to know when and where the remittance is available); for many living in rural and remote areas, these are barriers that are extremely challenging to overcome. This is one reason why both domestic and international remittances occur infrequently in rural areas, and similarly helps to explain why the large volumes of money being shared globally as remittances (Mohapatra & Ratha, 2011), at least in Ethiopia, primarily benefiting urbanites or relatively upper class rural residents.

Conclusion

Diversification can enhance resilience. In this article, we challenge the notion that diversification necessarily enhances resilience and the generally accepted prescriptive nature of diversification in adaptive and transformative capacity building. Ultimately resilience, adaptive, and transformative capacities are context specific and understanding the local social and ecological conditions is important to building resilient communities and systems.

Diversification of crops may be an expression of vulnerability and decrease resilience. For example, a higher yielding long-term crop may be exchanged with lower yielding short-term crops in response to rainfall variability. This addresses some short-term uncertainty, but is maladaptive as it decreases overall food production and lengthens the period of the year

without sufficient food. Diversification of livelihood choices may also be an expression of vulnerability and decrease resilience. For example, migration done out of duress and food shortage mitigates immediate pressures on the family, but creates new vulnerabilities as unskilled, young workers struggle to find temporary, low-paid work and are unable to pursue their education. Financial diversification can enhance options and opportunities, but without the right policies and regulations in place, that diversification may not benefit the most vulnerable.

We are cognizant that we are not the first to raise concerns about potential negative impacts of diversification. We also recognize the limitations of this critical perspective as this research was not grounded in a rigorous impact assessment framework (Béné, Chowdhury, Rashid, Dhali, & Jahan, 2017). However, these cases represent specific instances in which diversification can be ineffective, and in many instances, actually maladaptive. Important to this discussion is that a significant portion of the literature, as well as within policies and practices, diversification is advocated with a focus primarily on its potential benefits. This article contributes to the critical discourse that suggests benefits are unequal, and have diverse impacts on different members of society (e.g. Dimova & Sen, 2010). This has practical implications in other places where there is a notable gap between wealthy and poor members of rural communities, and the policies and programs designed for such contexts. This is not merely an academic discussion. The Sustainable Development Goals and their targets have resilience embedded within them. As the metrics emerge about how the SDGs and the targets will be measured, monitored, and tracked, the assumptions about resilience may become embedded. It is, therefore, crucial that we critically analyze how the metrics for goals and targets are created, and what assumptions are included within them. One positive way forward, in line with Béné et al.'s (2017) call to action, is for more research to assess and evaluate the short, seasonal, annual and long-term impacts of choices, and thus better inform the metrics and scales that will form the achievement narrative for the 2030 Agenda for Sustainable Development. In so doing, it will be essential to ensure that assessments and measurements of resilience take into account the multiple and diverse impacts that diversification can have, for whom and for how long.

Disclosure statement

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